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MEMORANDUM

SUBJECT: EPA Comments, Fish Tissue and Tagging Study Workplan and QAPP

FROM: Helen Bottcher

TO: Chris Budai and Dan Carlson, USACE Portland District

DATE: February 18, 2022

Document Reviewed:

Draft Workplan with Quality Assurance Project Plan for Smallmouth Bass Acoustic Telemetry and Tissue Sampling for Spring 2022 at River Operable Unit, Bradford Island, Cascade Locks, Oregon. Prepared by U.S. Army Corps of Engineers, Portland and Seattle Districts. Dated January 28, 2022

Overall Comments

EPA reviewers agree that additional tagging data could be helpful, and it will certainly be interesting to see how spill operations effect fish behavior in the forebay. We are pleased to see the extended area of acoustic receivers proposed.

However, we do not agree that additional bass tissue data is needed at this time. We don't believe that understanding seasonal variability in bass tissue concentrations is imperative because it is unlikely to change the outcome of the risk assessments or the Feasibility Study – regardless of seasonal changes, cleanup actions in the river are needed to lower contaminant concentrations (especially PCBs) in fish. We are also concerned that the data generated will not be sufficient to meet the stated objective of understanding seasonal variability and that it may be difficult to draw conclusions from the results.

We do not see a need to update the risk assessments. EPA would prefer to focus near term OU1 efforts on screening remedial technologies and collecting data needed to design and implement remedial actions.

Workplan and QAPP

Page 13, Table 3. Since a lab has not been identified, it would be helpful to at least know what lab accreditation USACE requires.

Pages 13 and 14, Section 1.2.2 Problem Definition, Site History, and Background. The discussion of 2017/2018 sampling of the supplemental passive porewater and sediment traps did not include an analysis of the contaminant data in the porewater or sediments that was derived from those efforts and only noted the presence of cobbles and boulders from a video survey of the river bottom. In addition, the decision to collect additional fish data to answer the question of seasonal influences was not referenced against a specific analysis of the existing data set that identifies this type of data gap. Supplemental data gathering efforts should be supported by a data gap/data uncertainty analysis.

Page 14, Section 1.2.2., second full paragraph. The language “Based on the length of time since previous fish sampling” is confusing, because fish were sampled recently, in 2020. Similar language appears in the second paragraph of Section 1.3.1.

Page 14, Section 1.2.2, second full paragraph. Near the end of this section, the text cites seasonal variability as the reason for conducting the study. It would be helpful to provide additional detail here. What are the important seasonal changes that could impact the results? The study will collect additional bass, but not additional crayfish or clams. This suggests that USACE believes any seasonal differences will be related primarily to changes in bass behavior or physiology, not to seasonal differences in contaminant flux or discharge from upland sources. What about bass is different in March? Feeding rate? Spawning status? Why is March the best time to collect additional tissue for analysis?

Page 16, Table 4. The line “PQOs Developed for Summer 2020 Sampling (USACE, 2020)” at the top of this table is confusing. Some of the language appears to be taken word for word from the 2020 sampling plan, but in other places, the language has been updated for 2022.

Page 16 and 17, Table 4, PQOs 2 and 4. Assessing seasonal differences is cited as the reason for the study. But it may be difficult to draw clear conclusions. If concentrations are lower in 2022 than they were in 2020, will that suggest a continued decline in concentrations? Or will it suggest seasonal differences, perhaps due to lower feeding rates in winter? If concentrations are higher, will that suggest the decline cited by USACE in the October 2021 data report was illusory? Or would seasonal differences, perhaps due to female fish gaining fat through egg production explain the increase?

Page 19, Table 6. Bait will be analyzed, but there is no plan to use the resulting data. We don’t object to analyzing the bait, but since the fish stomach contents will be removed via gastric lavage prior to analysis (as described in Section 2.1.2), it is not clear why analyzing the bait is important.

Page 21, Section 2.1.1. The results of the previous fish tagging study suggest that at least portions of the “reference target area” described here and shown on Figure 3 are problematic. Fish that were caught, tagged, and released on the north shore of Bradford Island traveled to locations in the “reference target area.” Table 3 of the report (Kock et. al 2021) shows that fish from North Bradford Island traveled to Boat Rock, Goose Island, Cascades Island, and the North Shore. This suggests that a different reference area, well upstream of RM 147, is needed to ensure fish from reference areas have not been exposed to contaminants released from Bradford Island.

Page 22, Section 2.1.2 Sample Collection Procedures. The portion of the fish tissue used for analysis needs to be identified (i.e., whole body, edible fillet w/belly fat, scales or no scales, etc.). From the previous studies this appears to be whole-body, though these details need to be identified in the QAPP in order to fully establish the representativeness of the resulting contaminant data.

Page 28, Section 2.3.2 Analytical Method QC Samples. Because the lab is yet to be selected, USACE will need to update the LCS and Surrogate control limits used by the lab once those become available. In lieu of updating this section, this could be provided in the Stage 2 data validation reports, but this needs to be documented to support data comparability, usability, and any future evaluation of the data.

Page 30, Section 4.3.1. Data validation is planned to Stage 2a only. EPA's preference would be to validate to State 4 ten percent of the analytical data.

Pages 36 and 37, Section 5.4. What are the project-specific goals for data precision, accuracy, and completion? How will representativeness be determined, given that no trip blanks or equipment rinse blanks are planned?

Appendix A

PDF page 2, Background. It appears this section has not been updated – the last sentence suggests the 2020 study has not yet been implemented.

PDF page 3, last paragraph, Implementation Methods. The removal of stomach contents is not described here. It should be, unless it will be performed at the laboratory (which seems unlikely, as the fish will be dead and frozen when they arrive at the lab). Were stomach contents removed prior to analysis during the 2020 study? Please confirm; if this is a change from the previous study, EPA recommends NOT removing stomach contents this time, as doing so would introduce a new and potentially confounding variable.

PDF Page 5, second paragraph, Acoustic Telemetry Study. The text doesn't describe how the receivers will be deployed or how staff will visit the sites during the study to check on the operational status and download data. We assume this work will be done by boat. However, many of the sites appear to be within the forebay Boating Restriction Zone. Will the receivers in this area be accessible from land? Or will they simply not be checked until after spill operations have ended in September or early October?

PDF page 6, examples of previous telemetry research. The 2020 study should be at least mentioned and include in the list of links - <https://pubs.er.usgs.gov/publication/ofr20211099>

Laboratory Methods. The QAPP does not include information about how the tissue will be handled and processed by the laboratory. This could be important, especially as these fish will go to a different laboratory than those collected in 2020. Please ensure that the equipment and procedures used grind up the fish, weigh out and digest the samples, etc. are documented in the final report if these details are not available prior to the sampling event.

Appendix B

Please add Water Temperature to the form and collect subsurface water temperature at least once a day when staff are in the field for this study. Water temperature can impact fish behavior, so understanding any significant temperature changes could be helpful in evaluating the study results.

Reference

Kock, T.J., Hansen, G.S., and Evans, S.D., 2021, Behavior and movement of smallmouth bass (*Micropterus dolomieu*) in the forebay of Bonneville Dam, Columbia River, August–December 2020: U.S. Geological Survey Open-File Report 2021–1099, 13 p., <https://doi.org/10.3133/ofr20211099>.